by Harold Ort, N2RLL, Editor

Bushcomm's BBA-100S HF Antenna

From the land Down Under—Perth, Australia, to be exact—comes an absolutely *superior* antenna that I've had the pleasure to use for a few months now at my home QTH. The 66-foot-long Bushcomm BBA-100S is a shorter version of the BBA-100, which is 90 feet long.

If you're a ham, the specs on the BBA-100S are pretty straightforward. It covers 3.5 to 30 MHz *without* a tuner, and you can kick up the power to 300 watts PEP. I've seen a lot of wire antennas in many configurations, from simple dipoles claiming wild specs to vertical antennas with exotic looks and equally exotic specs. Some work, some don't. Many of these antennas you can make at home in an afternoon with a soldering iron and some wire or tubing and get good results. But when an antenna comes my way that stands out from the crowd, it's time to tell the radio world. Such is the case with the Bushcomm BBA-100S HF antenna, sold exclusively in the United States by Array Solutions (www.arraysolutions.com). Jay Terleski of Array Solutions has been *very* patient with me doing this review, but as I told Jay, giving a product a fair, long-term examination is well worth the time and effort. So let's look at the BBA-100S to see what it can do for you, whether you're a ham or hardcore SWL or DXer.

Built To Last

The BBA-100S is a unique antenna with stainless construction throughout. Connections, balun, and spacing elements are all solid and well made. You see it right away! Opening the box is like opening a much-wanted gift during the holidays; you instantly feel like you're in for a treat and really have something worth your hard-earned money.

Out of the box you can be up and running with the antenna in less than an hour, provided you've planned your installation. My weakness as a radio nut is that I always *think* I've got what I need, but then reality sets in. This time it was the coax. Simply *being sure* you have enough of the right thing doesn't work.

The box arrived intact and the antenna was well protected from the rigors of transit with ample bubble wrap.

Plan, plan, plan! Use your measuring tape and some rope; plan where the center SO-239 connector will end up if you mount the BBA-100S between support x and y. You'll want enough slack in the coax—preferably RG58U or equivalent (*NOT* the heavy and hard-to-work-with RG8U)—so the antenna isn't pulled to the side. It's supposed to hang freely between two tall supports that are at least 25 to 30 feet above ground. I put mine between two wooden 2 x 2 poles; one was attached to the far end of the shed and the other at the opposite end of our yard.

The BBA-100S antenna out of the box and ready for an easy afternoon's hoisting.

Carefully untape each roll of wire and extend the antenna. The entire process takes a few minutes, but it must be done with care and planning to ensure the wires uncoil easily.

That's no small task in my neck of the woods, but this shorter version antenna just fits.

Besides the coax, you'll need to plan how much nylon rope you'll need. Don't get the cheap stuff; you're hanging an antenna that weighs about 10 pounds. It's not that it's heavy or cumbersome, but you do *need* relatively strong rope!

The antenna comes completely assembled, so there's no soldering, cutting, measuring, or fiddling around. The well-written, one-page instructions are correct about warning you to unpack and unfold the antenna carefully. Wait for a good "antenna day" (now is a good time of year to get this antenna and hoist it up). Unroll the antenna very slowly in your yard. The antenna is actually three parallel *stainless steel* wires spaced apart and held together by six small diameter white plastic tubes made of UV resistant fiberglass (it's about 4 feet, 3 inches wide). At each end is a very sturdy black egg-type insulator. Following the directions very carefully, step by step, after you've opened the antenna out on the lawn, you'll remove the masking tape holding the wires and spread it out further, working your way along each end and finally removing the small plastic wire twists until the antenna is spread out to its full length.

I threaded the rope through a stainless steel eye hook fastened near the top of each 2 x 2 post, brought the rope down each post to a marine-grade cleat, wrapping the near-ground-level rope around the cleat. This way I can service the antenna or lower it during extreme weather, which happened twice within the past six months!

As always, I recommend having a friend help you install the antenna. That extra muscle and set of eyes always helps, even on calm, sunny days. Why struggle with a long pole with an antenna and rope dangling from the entire assembly when you can work smarter and easier with some help?

The Real Test

The past few months I've been doing more listening than talking on the air(can you imagine that?). My favorite area of the world to tune is Papua New Guinea and parts of Africa. Signals from Port Moresby on 4980 were consistently solid. Signals from Nigeria on 4770 were equally good. I found the noise level to be particularly low across the board, with the exception being near the 3-MHz end of the spectrum. Chalk it up to living in the 21st Century, with all kinds of devices all around us from computer monitors to leaky powerline insulators. Lucky for us our receivers and ham transceivers are equipped with DSP and outstanding noise filters. But a good deal of the credit for elimination of noise and unwanted signals also clearly goes to the BBA-100S. I've used lots of other antennas and this is the first one that has provided consistent, better-than-expected signal delivery *with* a reduced noise level to boot. I can't get that with my homebrew dipole or commercially made G5RV!

On the air on 20, 40 and 75 meters, my signal reports were better than I've experienced in a long, long time. I've also spoken with folks in the military who use this antenna and they're equally pleased (and these guys are pickier than most hams—

Here you see the antenna unfolded with the six fiberglass spacers and eight taped coils.

Once you've completely unfolded the antenna to its entire length, connect your coax to the balun,. properly sealing it from Mother Nature, of course. Next, connect the rope of your choice (but don't skimp) to the provided egg insulators and hoist away!

Here's a simple contraption I made from a four- by two-foot peg board. If you need a way to store the antenna in the event of extreme weather, or to transport it should you move, this is an easy method. Trust me, you're never in a million years going to be able to simply lower this antenna and wind it on a large mailing tube or spool! Using pliers and an Xacto knife, I notched out three grooves on each long side of the board. (I used a peg board because it's light and the holes are made to order!). Working with one end of the antenna, fasten the egg insulator to the top center through one of the holes using a heavy duty cable tie or twine. Then get your antenna helper to stand in front of you, gently pulling the antenna away from you so you're able to "wind" the entire antenna over the board, carefully nudging the three antenna wires into the grooves with each turn of the board. When you get to the far end, simply attach the other egg insulator with a cable tie or twine. This took me all of 10 minutes to do and saved a lot of headaches. But you really do need that helper to hold the wires straight out away from you as you "wind" the antenna onto the board.

they *have* to be!). My SWR at 14.300 was 1.6:1; at 28.460 it was about 1.5:1. One of my contacts on 20 meters, using the PSK31 mode and the SkySweep program from Computer-Aided Technologies, was with Jean, F8RZ. Jean reported "...several answers [to his CQ call]...and it is a bit late for the 20-meter band I think, but the copy looks very good." What more can I say?

Then there was Dave in Beerse, Belgium, OO4DSQ, telling me my signal was a solid 599. His was also excellent with the BBA-100S antenna.

A Solid Performer

Bushcomm's been around for 15 years and makes a complete line of antennas for practically any HF installation. But if you're looking for an excellent broadband HF antenna, at $350 from Array Solutions, you'll really be pleased with the BBA-100S (or the larger BBA-100). Just because it's "broadbanded" doesn't mean it's a compromise antenna, far from it. I've used it as a primary HF ham antenna and for extended shortwave listening/DXing as well. It's built like a tank and works extremely well!

For more information, contact Array Solutions at www.arraysolutions.com or write them at 350 Gloria Road, Sunnyvale, TX 75182 or phone 972-203-2008. Array Solutions also has higher power models using their own high-power baluns. Please tell them you read about the Bushcomm BBA-100S in *Popular Communications*!■

The BBA-100S up and aready to go!